

ORIGINAL ARTICLE

Association of Depression and Body Mass Index with Inflammation Markers in Tehran Oil Refinery Shift Workers

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ABSTRACT

Shift working with the sleep disturbance may lead to an increased body weight, depression levels, and inflammation. The purpose of this study was to determine the association between depression scores, Body Mass Index (BMI) and inflammation markers among rotational shift workers in one of the Iranian Oil Refineries. A cross-sectional study was conducted among 189 shift workers aged 21-52 years old with mean 30.58(±6.970) in one of the oil refineries in Tehran city. Studied population was in an 8 hours backward shift (from night to morning). Demographic characteristics were gathered by a general questionnaire and anthropometric variables including weight and height were measured for calculating body mass index (BMI), were calculated. 21-items Beck Depression Inventory, which was translated in Persian, was used to assess the depressive symptoms. Level of Cortisol, IL-6 and hs-CRP was measured by 8 ml fasting blood sample, using RIA kit in radioimmunoassay method, R&D (Germany) kit in enzyme-linked immunosorbent method and quantitative diagnostic kit in immunoturbidimetry method produced by Pars Azmoon Company, respectively. The results of the current study showed that IL-6 and hs-CRP were higher, in workers with depression scores more than 9 in comparison with workers by depression scores equal or below 9 measured by the 21- Item Beck depression inventory. Although there were not statistically significant. There was inverse association between cortisol level and BMI (P-Value<0.01) and positive association between CRP and BMI (PV<0.01) and borderline positive association between IL-6 concentration with BMI (P-Value<0.05). The results of the study revealed that there was a direct association between inflammation factors with Body Mass Index in Tehran oil refinery shift workers. But, the significant relationship between cortisol level, IL-6 and CRP with Shift Work experience were not found.

KEYWORDS: Depression, BMI, Shift work, Oil Refinery, Inflammation